

Management Instruction

Internal Use and Transport of Pallets

Policy

This management instruction (MI) establishes standard requirements and procedures for internal use and transport of pallets for safety and maximum use of surface transportation.

This MI and other logistics orders are available online via the Network Operations Management Web site at: <http://blue.usps.gov/wps/portal/nom/policy-guidance/ddl> and on the PolicyNet Web site at <http://blue.usps.gov/cpim>.

Description

Proper loading of palletized Postal Service™ products in trailers is essential to prevent load shifting during transport that can result in load failure and potential safety hazards.

The two primary causes of load failure during transport are (1) voids in the load and (2) improper pallet stacking. Voids are excessive open spaces between pallets. Trailers in motion produce side sway and forward and backward motion; voids in the load may cause improper shifting of the pallets or product contents. Improper stacking of pallets can also cause load shifting. Load shifting can be avoided through load proper configuration and stacking of pallets for transport.

Standard Pallet Construction

Pallets must be made of high-quality material that can hold loads equal to a gross weight of 2,200 pounds. The standard pallet measures 40 inches by 48 inches at the base and allows for four-way entry by forklift trucks and two-way entry by pallet jacks. [See *Mailing Standards of the United States Postal Service*, Domestic Mail Manual (DMM) 705.8.1.]

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Loading Pallets

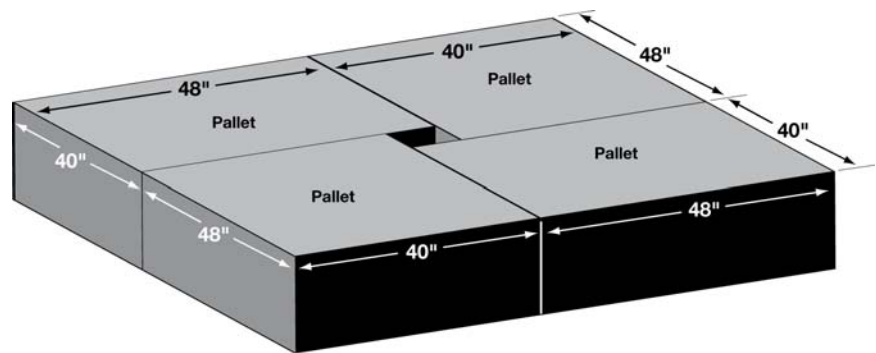
Use a “Pinwheel” Configuration

To reduce potential voids and load shifting when loading standard pallets (40 inches by 48 inches footprint), load pallets in an interlocking pattern known as a “pinwheel” configuration.

A pinwheel configuration consists of a set of four pallets (see Exhibit A-1) wherein the long side (48 inches) of a pallet is positioned against the short side (40 inches) of the adjacent pallet.

Exhibit A-1

A Pinwheel Configuration: A Set of Four Pallets

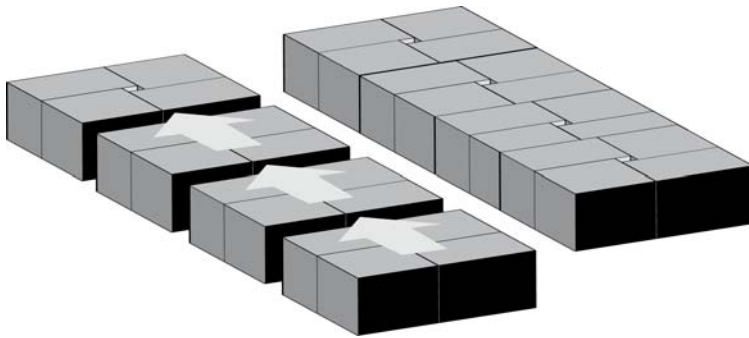


Loading a Single Row of Pallets or Pallet Boxes

A single row of pallets or pallet boxes consists of pinwheel configurations laying adjacent to each other (see Exhibit A-2). Repeat the pinwheel configuration until loading is complete.

Use two load restraints for every two pinwheels. If there are not enough pallets or pallet boxes (fewer than four) to configure a pinwheel, the grouping of pallets or pallet boxes must still be secured with two load restraints. The end of the load must always be secured with two load restraints.

Exhibit A-2
A Row of Pinwheel Configurations

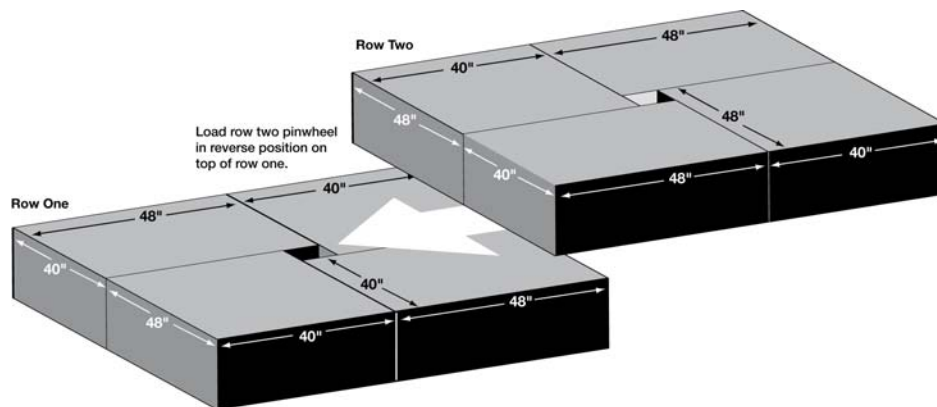


Using Reverse Pinwheels When Stacking Pallets or Pallet Boxes

When stacking pallets or pallet boxes, the pinwheel configuration of each set to be stacked must be in the reverse of the pinwheel configuration immediately below (see Exhibit A-3). Repeat the reverse pinwheel configuration for subsequent stacked rows until the load is complete. (See “Stacking Pallets or Pallet Boxes” for height and weight requirements for stacking.)

Use two load restraints for every two pinwheels. If there are not enough pallets or pallet boxes (fewer than four) to configure a pinwheel, the grouping of pallets or pallet boxes must still be secured with two load restraints. The end of the load must always be secured with two load restraints.

Exhibit A-3
Reverse Pinwheel Position When Stacking Rows



Transporting Pallets

Single Pallet Maximum Load

The maximum weight (pallet and mail) of a single palletized load is 2,200 pounds. The maximum height is 77 inches. **Exception:** A single pallet that is prepared for entry at Anchorage or Fairbanks, Alaska, has a maximum height of 72 inches (pallet, top cap, and mail). In other cases, the actual shipping height may be limited by the height of the trailer and/or depend on the receiving facility's available resources to safely handle or unload the materials (see DMM 705.8.5). These resources may include, but are not limited to, fork lifts, pallet jacks, dock plates, and other Postal Service-approved mechanized or nonmechanized equipment.

Use of Pallet Top Caps (see DMM 705.8.2)

The following guidelines apply when pallet top caps are required:

- a. Material may be used as a top cap only if the material has the following properties:
 - Provides a flat level surface horizontal to the base pallet.
 - Protects the integrity of the mail under the material while supporting a loaded pallet above the material.
 - Allows easy entry of a forklift to remove the upper pallet(s).
- b. Flimsy paper, fiberboard (e.g., the ends of paper rolls), or similar material are inadequate and may not be used as a top cap.
- c. Under no circumstances should another pallet be used as a top cap (see Handbook PO-502, *Container Methods*, Section 266.7c).
- d. Pallets of sacks, trays, parcels, bundles, or pallet boxes must contain a top cap if the pallets are to be stacked and do not contain strapping or banding sufficient to secure and maintain the integrity of the mail product contained in the pallet.
- e. The top pallet does not need to be top-capped if the strapping or banding securing the stacked pallets together neither damages the mail on the top pallet nor allows the stack to shift.
- f. Lower pallets containing parcels, trays, or bundles of mail (shrinkwrapped or banded) do not need to be top-capped if the top surface provides a sturdy, flat surface parallel to the pallet base that:
 - Allows safe and efficient stacking of the pallets to be placed on top.
 - Prevents the sliding of the top pallet(s), damaging to the loaded mail, or crushing of the load.

- g. When a pallet or pallet box top cap is required, the top cap must be secured to the pallet horizontal to the plane of the base pallet with either stretchwrap or at least two crossed straps or bands (nonmetal and nonwire) so that the cap stays in place to protect the mail and to maintain the integrity of the pallet load.

Securing Pallets

To maintain the integrity of pallets during transport and handling, the following measures are required:

- a. Secure individual pallets with at least two straps or bands of appropriate material or stretchable or shrinkable plastic. Do not use wire or metal bands, straps, buckles, seals, or similar metal-fastening devices.
- b. Secure stacked pallets within the trailer with at least two straps of appropriate material and connect the material to the e-track system on the trailer wall. Use shoring straps after every two pinwheels. If there are not enough pallets (fewer than four) to configure a pinwheel, the grouping of pallets must still be secured with two load restraints. The end of the load must always be secured with two load restraints.
- c. Do not dispatch a trailer under any circumstances if the load and integrity of pallets cannot be made secure.

Pallet Boxes

Physical Requirements (see DMM 705.8.4)

The following physical requirements must be applied for use of pallet boxes:

- a. Pallet boxes constructed of single-, double-, or triple-wall corrugated fiberboard placed on pallets to hold sacks or parcels may be used. The standard size for pallet boxes measures approximately 40 inches by 48 inches.
- b. The maximum load capacity of a pallet box must never exceed the gross weight limit specified by the manufacturer (normally stipulated in the "Box Certificate" seal stenciled on the container).
- c. The combined height of a single pallet, pallet box, and mail may not exceed 77 inches. For safety and load integrity, the mail contents may not extend above the top of the rim of the pallet box. **Note:** The actual shipping height will depend on the receiving facility's available resources (i.e., fork lifts, pallet jacks, and other Postal Service-approved mechanized and nonmechanized equipment) to safely handle and unload the palletized products.

- d. Pallet boxes must protect the mail and maintain the integrity of the pallet loads throughout transporting, handling, and processing.
- e. Single-and double-wall corrugated fiberboard unstacked may only be used for light loads, not to exceed the gross weight limit specified by the manufacturer (normally stipulated in the "Box Certificate" seal stenciled on the container). Do not double-stack single-wall or double-wall pallet boxes under any circumstances.
- f. Use only triple-wall corrugated fiberboard pallet boxes for stacking and place no higher than two pallets boxes.

Securing Pallet Boxes

The requirements for securing pallet boxes are the following:

- a. Secure pallet boxes to the pallet with strapping, banding, stretchable plastic, shrinkwrap, or other material to ensure that the pallet can be safely unloaded from vehicles, transported, and processed. **(Do not use wire or metal bands, straps, buckles, seals, or similar metal-fastening devices.)**
- b. Double-stacked triple-wall pallet boxes must be level to the floor of the trailer and secured with the trailer e-track system to prevent shifting and ensure integrity of the stack during transport. Use shoring straps after every two pinwheels. If there are not enough pallets or pallet boxes (fewer than four) to configure a pinwheel, the grouping of pallet boxes must still be secured with two load restraints. The end of the load must always be secured with two load restraints.
- c. Under no circumstances should a trailer be dispatched if the loading and integrity of stacked pallet boxes cannot be made secure.

Stacking Pallets or Pallet Boxes

Physical Requirements (see DMM 705.8.3)

The physical requirements for stacking pallets or pallet boxes are as follows:

- a. The combined gross weight of the stacked pallets or pallet boxes (pallets, top caps, and mail) must not exceed 2,200 pounds.

- b. The combined height of **stacked** pallets and their loads must not exceed 84 inches. (**Note:** Even though 84 inches is the maximum allowable height, pallets must not be stacked when the combined height will exceed the height of the door opening of the trailer.) The actual shipping height will depend on the receiving facility's available resources to safely handle or safely unload the materials. These resources may include, but are not limited to, fork lifts, pallet jacks, dock plates, and other Postal Service-approved mechanized or nonmechanized equipment required to safely handle and unload the palletized products.
- c. The heaviest pallet must be on the bottom and the lightest pallet on the top.
- d. Do not intersperse or commingle double-stacked pallets with other mail transport equipment or mixed container loads (i.e., bed loads, sacks or bundles, rolling stock, or single-staked pallets). Stacked loads must be stable. Do not dispatch unstable loads under any condition.
- e. If there are not enough pallets or pallet boxes (fewer than four) to configure a pinwheel, the grouping of pallet boxes must still be secured with two load restraints. The end of the load must always be secured with two load restraints.
- f. For freight rail trailers not equipped with e-track rails, **stacking of pallets or pallet boxes is prohibited under any circumstances.** Because restraining devices cannot be used, pallets or pallet boxes must meet all integrity and preparation conditions cited above, and freight rail trailers must be loaded using the pinwheel configuration (see Exhibit A-1). The load must be secured in accordance with established procedures for freight rail trailers. (See *Standard Operating Procedures for Properly Restraining Mail Containers*, issued April 16, 2004, Logistics Order LO200407.)

Safety Instructions for Stacking Pallets or Pallet Boxes

Stacking pallets or pallet boxes must be done in a way that ensures safety and load integrity within the vehicle from origin to destination. When stacking and securing pallets or pallet boxes, perform the following actions:

- a. Plan the before you begin and do the following:
 1. Verify that the receiving facility has the available resources to safely handle/unload stacked pallets or pallet boxes. (**Note:** Pallets, pallet boxes, or stacked pallets are to be shipped to an intended receiving facility if, and only if, that facility has the appropriate equipment and resources to safely and properly handle and unload the shipment. These resources may include, but are not limited to, fork lifts, pallet jacks, dock plates, and other Postal Service-approved mechanized or nonmechanized equipment required to safely handle and unload the palletized products.)
 2. Determine the height of the trailer door opening.
 3. Determine how much space is needed on the trailer for the pallets or pallet boxes.
- b. Verify the availability and quantity of required load restraint equipment.
- c. Start the stack on a level, solid surface.
- d. Ensure that pallets or pallet boxes to be placed on the bottom row can support the row(s) that will go on top.
- e. Always secure materials from falling, collapsing, rolling, or sliding.
- f. Consider the size and weight of the materials and avoid stacking top-heavy materials that may cause an entire load to shift or fall.
- g. Stack pallets or pallet boxes prior to loading to ensure the integrity of the stack throughout the loading process. (For stacking pallet boxes, use only triple-wall corrugated fiberboard boxes and stack no more than two boxes high.) For safety and stability purposes, prior to moving the stack into the vehicle, ensure that the height of the stack does not exceed the trailer's height for adequate clearance.
- h. Immediately report the following conditions to platform supervision or other management as appropriate in accordance with local procedures:
 1. Any trailer received in which the integrity and security of the load has been compromised.
 2. Receipt of a palletized shipment by a receiving facility that does not have the mechanized or nonmechanized equipment, or other appropriate resources to safely and properly handle and unload the pallet shipment.

3. Damage to Postal Service products or vehicle due to load shifting during transport.
 4. Trailer doors that do not function properly for reasons associated with damage or mechanical defect.
 5. Any vehicle safety violations that prevent the proper loading and/or restraint of pallets or pallet boxes for safe transport including, but not limited to, trailer floor damage, missing or damaged "E" tracks or, damaged or insufficient quantity of load restraint equipment.
 6. Any other unusual condition(s) that pose potential unsafe conditions, give the perception of suspicious activity, or appear to be a potential health or security risk.
- i. Use best judgment at all times and especially where employee safety, sanctity, and security of the mail and protection of Postal Service products and transport equipment from damage are concerned.

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